

FIG. 1a (PRIOR ART)

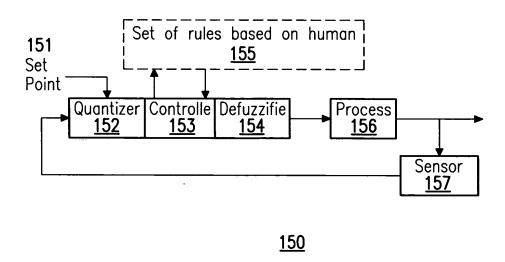


FIG. 1b (PRIOR ART)

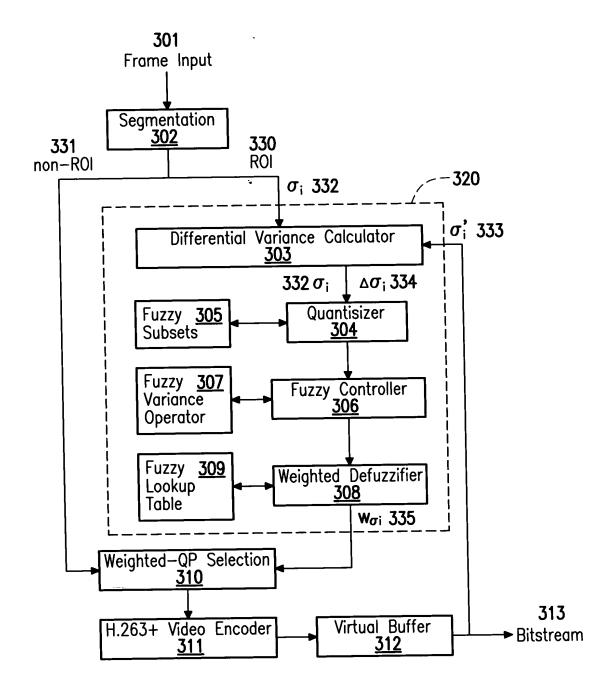


FIG. 2

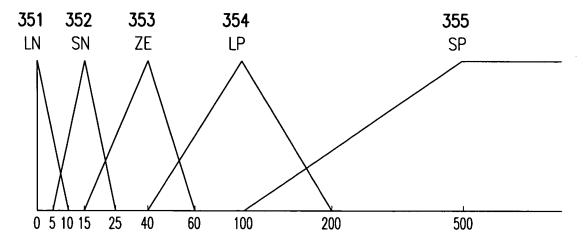


FIG. 3

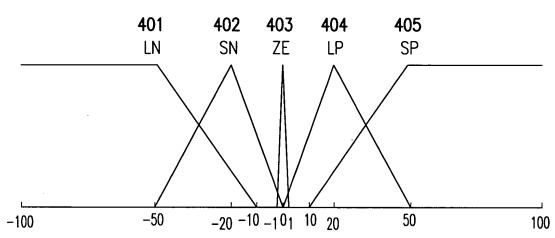


FIG. 4

|          | Variance Chamge |                 |                  |                  |                 |
|----------|-----------------|-----------------|------------------|------------------|-----------------|
| Variance | LN              | SN              | ZE               | SP               | LP              |
| LN       | LP <sub>1</sub> | LP 2            | LP 3             | LP 4             | LP <sub>5</sub> |
| SN       | SP <sub>6</sub> | SP <sub>7</sub> | SP <sub>8</sub>  | SP <sub>9</sub>  | SP 10           |
| ZE       | SP 11           | SP 12           | ZE <sub>13</sub> | SN 14            | LN 15           |
| SP       | ZE 16           | ZE 17           | SN 18            | SN 19            | LN 20           |
| LP       | LN 21           | LN 22           | LN <sub>23</sub> | LN <sub>24</sub> | LN 25           |
|          | Control Rules   |                 |                  |                  |                 |

FIG. 5

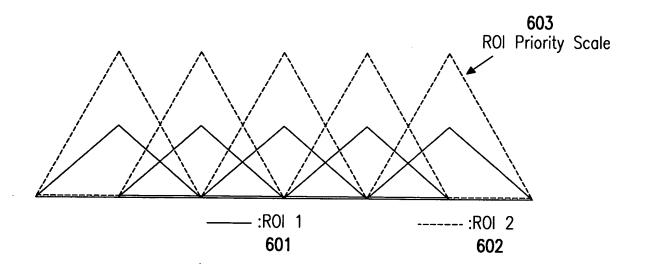


FIG. 6

|       | PSNR of<br>whole<br>frame (dB) | PSNR<br>of ROI<br>(dB) | Average<br>Bit—Rate<br>(bits) | Average<br>Time (ms) | Skipped<br>Frames |
|-------|--------------------------------|------------------------|-------------------------------|----------------------|-------------------|
| WR    | 31.45                          | 30.00                  | 2567                          | 15.56                | 17                |
| WA    | 29.80                          | 34.32                  | 2572                          | 22.79                | 17                |
| TF    | 28.73                          | 34.69                  | 2431                          | 22.91                | 17                |
| Fuzzy | 28.82                          | 35.14                  | 2579                          | 23.01                | 17                |

FIG. 7

|       | PSNR of<br>whole<br>frame (dB) | PSNR<br>of ROI<br>(dB) | Average<br>Bit-Rate<br>(bits) | Average<br>Time (ms) | Skipped<br>Frames |
|-------|--------------------------------|------------------------|-------------------------------|----------------------|-------------------|
| WR    | 36.37                          | 28.94                  | 1163                          | 17.77                | 12                |
| WA    | 34.19                          | 31.83                  | 1156                          | 24.80                | 11                |
| TF    | 33.18                          | 31.85                  | 1087                          | 25.47                | 11                |
| Fuzzy | 33.59                          | 32.38                  | 1154                          | 26.07                | 11                |

FIG. 8

|       | PSNR of<br>whole<br>frame (dB) | PSNR<br>of ROI<br>(dB) | Average<br>Bit-Rate<br>(bits) | Average<br>Time (ms) | Skipped<br>Frames |
|-------|--------------------------------|------------------------|-------------------------------|----------------------|-------------------|
| WR    | 28.09                          | 28.32                  | 2583                          | 16.37                | 27                |
| WA    | 26.81                          | 30.14                  | 2628                          | 23.89                | 28                |
| TF    | 26.87                          | 30.19                  | 2634                          | 25.53                | 28                |
| Fuzzy | 26.90                          | 30.52                  | 2607                          | 26.22                | 27                |

FIG. 9

|         | Number of<br>MBs | PSNR<br>PSNR (dB) | Avg. QP |
|---------|------------------|-------------------|---------|
| ROI 1   | 12               | 32.65             | 8.43    |
| ROI 2   | 6                | 29.40             | 13.17   |
| ROI 3   | 6                | 28.75             | 17.83   |
| All ROI | 24               | 30.86             | 11.96   |
| non-ROI | 75               | 28.58             | 27.96   |

FIG. 10